

AMENDMENTS TO THE CLAIMS

Please amend the claims as set forth below in marked-up form. This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method for backing up a file system in a partition comprising a plurality of allocation units, the method comprising:

creating a locally-stored image file by copying each allocation unit occupied by a plurality of files of the file system to ~~the~~a locally-stored image file, wherein the locally-stored image file is located within the same partition as the file system being backed up;

adding a directory map to the locally-stored image file that associates copied allocation units in the locally-stored image file with names of corresponding files from the file system; and

subsequent to creating the locally-stored image file, protecting the locally-stored image file from accidental user deletion or modification by initiating a process at system startup that opens the locally-stored image file to block subsequent processes from accessing the locally-stored image file.

2. (Original) The method of claim 1, wherein copying comprises compressing at least a subset of the allocation units.

3. (Original) The method of claim 1, wherein copying comprises:
maintaining a record of a pre-imaging state of the file system; and
copying only allocation units occupied by files included within the pre-imaging state of the file system.

4. (Original) The method of claim 1, wherein adding comprises grouping within the locally-stored image file the copied allocation units for individual files of the file system.

5. (Previously Presented) The method of claim 1, wherein copying comprises storing within the locally-stored image file one or more attributes related to each file, wherein the attributes comprise at least one of ownership attributes, access-control attributes, timestamp attributes, archival attributes, indexing attributes, encryption attributes, and compression attributes.

6. (Original) The method of claim 1, further comprising marking a beginning point of the locally-stored image file to assist in locating the locally-stored image file in the event of directory area corruption.

7. (Original) The method of claim 6, wherein marking comprises storing a unique beginning-of-image marker at an initial allocation unit occupied by the locally-stored image file.

8. (Previously Presented) The method of claim 6, wherein marking comprises storing, at a predetermined area of the partition, a location of an initial allocation unit occupied by the locally-stored image file.

9. (Cancelled)

10. (Previously Presented) The method of claim 1, wherein protecting the locally-stored image file further comprises providing a filter driver that intercepts and denies requests to access the locally-stored image file.

11. (Currently Amended) A method for restoring a file system to a partition comprising a plurality of allocation units, the method comprising:

accessing a locally-stored image file located within the partition to which the file system is to be restored, the locally-stored image file comprising a directory map and file data for a plurality of files;

initializing at least a subset of the allocation units of the partition not occupied by the locally-stored image file including one or more allocation units used for a directory area of the partition;

extracting the file data from the locally-stored image file into the initialized allocation units without disturbing the locally-stored image file;

creating a new directory area for the partition using the directory map; and

protecting the locally-stored image file from accidental user deletion or modification subsequent to creation of the locally-stored image file by initiating a process at system startup that opens the locally-stored image file to block subsequent processes from accessing the locally-stored image file.

12. (Original) The method of claim 11, wherein the directory map associates names for the plurality of files with corresponding portions of the file data, and wherein creating comprises generating a new directory area for the partition that associates the file names with the extracted file data.

13. (Original) The method of claim 11, wherein creating comprises adding an indication of the locally-stored image file to the new directory area.

14. (Original) The method of claim 11, wherein extracting comprises decompressing at least a subset of the file data.

15. (Previously Presented) The method of claim 11, wherein the directory map indicates at least one attribute for a file, and wherein creating comprises setting the at least one attribute for the file in the directory area, wherein the at least one attribute comprises at least one of an ownership attribute, an access control attribute, a timestamp attribute, an archival attribute, an indexing attribute, an encryption attribute, and a compression attribute.

16. (Original) The method of claim 11, wherein accessing comprises searching for an allocation unit containing a unique beginning-of-image marker for the locally-stored image file.

17. (Original) The method of claim 11, wherein accessing comprises reading from a predetermined area of the partition a location of an initial allocation unit of the locally-stored image file.

18. (Original) The method of claim 11, further comprising defragmenting the locally-stored image file within the partition prior to extracting the file data.

19. (Cancelled)

20. (Previously Presented) The method of claim 11, wherein protecting the locally-stored image file further comprises providing a filter driver that intercepts and denies requests to access the locally-stored image file.

21. (Currently Amended) An apparatus for backing up a file system in a partition comprising a plurality of allocation units, the apparatus comprising:

a processor;

a local imager programmed to create a locally-stored image file by copying each allocation unit occupied by a plurality of files of the file system to a~~the~~ locally-stored image file, wherein the locally-stored image file is located within the same partition as the file system being backed up, and wherein the local imager is configured to add a directory map to the locally-stored image file that associates copied allocation units in the locally-stored image file with names of corresponding files from the file system; and

a protection component programmed to protect the locally-stored image file from accidental user deletion or modification subsequent to creation of the locally-stored image file by initiating a process at system startup that opens the locally-stored image file to block subsequent processes from accessing the locally-stored image file.

22. (Previously Presented) The apparatus of claim 21, wherein the local imager is configured to compress at least a subset of the allocation units copied to the locally-stored image file.

23. (Previously Presented) The apparatus of claim 21, wherein the local imager is configured to maintain a record of a pre-imaging state of the file system and to copy only allocation units occupied by files included within the pre-imaging state of the file system.

24. (Previously Presented) The apparatus of claim 21, wherein the local imager is configured to group within the locally-stored image file the copied allocation units for individual files of the file system.

25. (Previously Presented) The apparatus of claim 21, wherein the local imager is configured to store within the locally-stored image file one or more attributes relating to at least one file of the file system, wherein the file attributes comprise at least one of ownership attributes, access-control attributes, timestamp attributes, archival attributes, indexing attributes, encryption attributes, and compression attributes.

26. (Previously Presented) The apparatus of claim 21, wherein the local imager is configured to mark a beginning point of the locally-stored image file to assist in locating the locally-stored image file in the event of directory area corruption.

27. (Previously Presented) The apparatus of claim 26, wherein the local imager is configured to mark the beginning point by storing a unique beginning-of-image marker at an initial allocation unit occupied by the locally-stored image file.

28. (Previously Presented) The apparatus of claim 26, wherein the local imager is configured to mark the beginning point by storing, at a predetermined area of the partition, a location of an initial allocation unit occupied by the locally-stored image file.

29. (Cancelled)

30. (Previously Presented) The apparatus of claim 21, wherein the protection component further comprises a filter driver that intercepts and denies requests to access the locally-stored image file.

31. (Currently Amended) An apparatus for restoring a file system to a partition comprising a plurality of allocation units, the apparatus comprising:

a processor;

an image locator to find a locally-stored image file located within the partition to which the file system is to be restored, the locally-stored image file comprising a directory map and file data for a plurality of files;

a media formatter to initialize at least a subset of the allocation units of the partition not occupied by the locally-stored image file including one or more allocation units used for a directory area of the partition;

a data extractor to extract the file data from the locally-stored image file into the initialized allocation units without disturbing the locally-stored image file;

a directory area builder to build a new directory area for the partition using the directory map; and

a protection component programmed to protect the locally-stored image file from accidental user deletion or modification subsequent to creation of the locally-stored image file by initiating a process at system startup that opens the locally-stored image file to block subsequent processes from accessing the locally-stored image file.

32. (Previously Presented) The apparatus of claim 31, wherein the directory map associates names for the plurality of files with corresponding portions of the file data, and wherein the directory area builder is configured to generate a new directory area for the partition that associates the file names with the extracted file data.

33. (Previously Presented) The apparatus of claim 31, wherein the directory area builder is configured to add an indication of the locally-stored image file to the new directory area.

34. (Previously Presented) The apparatus of claim 31, wherein the data extractor is configured to decompress at least a subset of the file data.

35. (Previously Presented) The apparatus of claim 31, wherein the directory map indicates at least one attribute for a file, wherein the directory area builder is configured to set the at least one attribute of the file in the directory area, and wherein the at least one attribute comprises at least one of an ownership attribute, an access control attribute, a timestamp attribute, an archival attribute, an indexing attribute, an encryption attribute, and a compression attribute.

36. (Previously Presented) The apparatus of claim 31, wherein the image locator is configured to search for an allocation unit containing a unique beginning-of-image marker for the locally-stored image file.

37. (Previously Presented) The apparatus of claim 31, wherein the image locator is configured to read from a predetermined area of the partition a location of at least a first allocation unit of the locally-stored image file.

38. (Original) The apparatus of claim 31, further comprising an image defragmenter to defragment the locally-stored image file within the partition before the data extractor extracts the file data.

39. (Cancelled)

40. (Previously Presented) The apparatus of claim 31, wherein the protection component further comprises a filter driver that intercepts and denies requests to access the locally-stored image file.

41. (Currently Amended) A method for localized backup and restoration of a file system in a partition comprising a plurality of allocation units, the method comprising:
creating a locally-stored image file by copying each allocation unit occupied by a plurality of files of the file system to the locally-stored image file, wherein the locally-stored image file is located within the same partition as the file system being backed up;
adding a directory map to the locally-stored image file that associates copied allocation units in the locally-stored image file with names of corresponding files from the file system;
locating the locally-stored image file within the partition;
initializing at least a subset of the allocation units of the partition not occupied by the locally-stored image file including one or more allocation units used for a directory area of the partition;

extracting file data from the locally-stored image file into the initialized allocation units without disturbing the locally-stored image file;

creating a new directory area for the partition using the directory map; and

subsequent to creating the locally-stored image file, protecting the locally-stored image file from accidental user deletion or modification by initiating a process at system startup that opens the locally-stored image file to block subsequent processes from accessing the locally-stored image file.

42. (Currently Amended) A computer-readable storage medium comprising program code for backing up a file system in a partition comprising a plurality of allocation units, the computer-readable storage medium comprising:

program code for creating a locally-stored image file by copying each allocation unit occupied by a plurality of files of the file system to a locally-stored image file, wherein the locally-stored image file is located within the same partition as the file system being backed up;

program code for adding a directory map to the locally-stored image file that associates copied allocation units in the locally-stored image file with names of corresponding files from the file system; and

program code for protecting the locally-stored image file from accidental user deletion or modification subsequent to creation of the locally-stored image file by initiating a process at system startup that opens the locally-stored image file to block subsequent processes from accessing the locally-stored image file.

43. (Currently Amended) A computer-readable storage medium comprising program code for restoring a file system to a partition comprising a plurality of allocation units, the computer-readable storage medium comprising:

program code to access a locally-stored image file located within the partition to which the file system is to be restored, the locally-stored image file comprising a directory map and file data for a plurality of files;

program code to initialize at least a subset of the allocation units of the partition not occupied by the locally-stored image file including one or more allocation units used for a directory area of the partition;

program code to extract the file data from the locally-stored image file into the initialized allocation units without disturbing the locally-stored image file;

program code to create a new directory area for the partition using the directory map; and

program code to protect the locally-stored image file from accidental user deletion or modification subsequent to creation of the locally-stored image file by initiating a process at system startup that opens the locally-stored image file to block subsequent processes from accessing the locally-stored image file.